IT Unit 3

Topic 1

# Organisations & Data Management

**Developing a RDBMS, p 45**

1. In which stage of the PSM does this occur?

* This occurs in the development stage of the problem solving methodology.

1. What is meant by referential integrity?

* Once the developer has created the relationships, he/she will need to ensure that referential integrity is applied, which means the presence of data in foreign keys.

**Testing the solution, p 49**

1. What is the purpose of testing?

* Testing the product is done to ensure that all features and functions work correctly and that the information produced is free of errors.

1. Distinguish between informal and formal testing.

**Informal testing** occurs during the development stage, as software developers create a solution they are constantly informally testing to see if the solution behaves accordingly to expectations. While **Formal testing** involves testing the overall solution after it has been completed to see if the solution solves the problem.

1. What is a bench test?

* A test/check that determines how the solution, or a component of a solution, would behave with a range of test data.

1. What is a test plan and what are the benefits of having a test plan?

* A test plan is used to show all the functions to be tested, the sample test data and how the function is expected to handle the data. You have a test plan to show what functions are working and the ones that aren’t. It gives you a better indication of what should be happening and what you must fix/improve upon.

1. What is meant by user acceptance testing?

* The solution the developers have created meets the actual needs of the intended users. This process usually involves asking users to follow a series of steps to complete a task in the solution or interpreting the information contained in the output, then providing feedback to the developers.

**Testing procedure:**

The test plan is used to allow a systematic check of each part of the solution to ensure its proper operation. It involves six steps (three at design stage & three at development stage:

1. Decide on tests to be conducted (design stage).
2. Determine the test data (design stage).
3. Determine expected results (design stage).
4. Record results of testing (develop stage).
5. Correct any errors (develop stage).
6. Provide concluding statement (develop stage).

**Features to test:**

1. Testing table validation
   1. What is the purpose of testing validation?

* It ensures that the data is accurate before it is entered via forms or queries that run. It’s important to choose test data that will test the boundaries of the validation rule as well as the data type and even the existence of the data.
  1. What is the rule of thumb in testing data values?
* Is to test a value before the value itself and one value greater than the value in the validation rule.

1. Testing the query selection criteria
   1. In testing the queries, why must the test data be chosen carefully?

* The test data must be chosen carefully to ensure that there are some records that should be returned by the query, some that should be rejected for failing to meet the first even though they met the second criterion, some that fail to meet the second after meeting the first criterion and finally some that miss both criteria.

1. Testing formulas and summary statistics

* Its critical to test formulas and summary statistics, that occur in developer’s queries. Choose appropriate test data so that it is easy to determine if the final result is accurate.

1. Testing sorting, primary & secondary

* Key feature of the query is making sure we can sort the results in an organised and useable manner (information). Primary and secondary sorts have to be tested, the key is to demonstrate that a sort works numerically, alphabetically and sometimes alphanumerically. Developer’s will need at least three test values to demonstrate this.